

Claims 1 and 5 are amended to include the recitation “the aqueous dispersion being substantially free of stabilizing inorganic salts,” referring to the dispersion appearing in the introductory phase of the claim. Basis for the recitation appears at page 2 of the specification, line 4, and at page 4, line 15.

In the specification, in the paragraph at page 2, line 4, the following appears:

It is an object of the present invention to provide aqueous dispersions of water-soluble polymers, which dispersions are virtually free of stabilizing inorganic salts.

In the specification at page 4, lines 15 to 20, the following appears:

As is evident from the prior art stated at the outset, concentrated solutions of inorganic salts are a conventional medium for the preparation of aqueous dispersions of water-soluble polymers. As a result, the known dispersions have a very high salt load. Novel aqueous dispersions of water-soluble polymers are in comparison virtually salt-free.

37 C.F.R. § 1.121(e), “Disclosure consistency” requires that one must “secure substantial correspondence between the claims and the remainder of the specification.”

Please note the use of the word “substantial” in the C.F.R. itself.

As is evident from the specification and claims, the “dispersion” referred to is a dispersion of polymer particles.

Applicants respectfully submit that there is substantial correspondence between the claims and the specification and that in context the criticized language, in the light of the specification, conveys a meaning to one of ordinary skill in this art that is sufficiently definite.

The art in fact knows the “amount of stabilizing salt” required.

Please see the subject application, page 1. Please see also the applied Fong et al. patent.

The specification itself contains sufficient guidelines to insure that the criticized meaning is actually definite. The amount of salt, including that from the added sodium

hydroxide, disclosed to be employed in the subject examples, to adjust polymerization parameters as pH, is clearly very much less than that required by the prior art to obtain dispersed polymers. In Fong et al., at least 5% salt based on the weight of the dispersion is employed which itself can contain at low as 5 up to 50 weight percent of the polymer of interest. Please note, that Fong et al. imply pH adjusting additions since the employed pH can range from about 5 to about 8, col. 4, lines 10 to 31.

The M.P.E.P. 8<sup>th</sup> Ed., Rev. 1, emphasizes in Section 2173.05(b) (D) that “substantially” is often used to describe a particular characteristic of the claimed invention. The M.P.E.P. states in the introduction to the section:

Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.

Applicants respectfully submit that the criticized language satisfied that criterion.

In summary, “substantially free” is in fact defined in the claim by the following language of “stabilizing salt”.

The “requisite degree” of stabilizing salt is that which the prior art has employed in the past to obtain a stabilized dispersion, as explained in the subject application.

By the same token, the prior art would recognize when a composition containing the dispersed polymer is “substantially free of stabilizing salt”.

Reconsideration and withdrawal of the rejection of Claims 1-7 under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Fong et al. (U.S. 6,426,383 B1) are also requested.

Fong et al. may be interpreted, as the Official Action states, as suggesting that an inorganic salt is an optional component and, if used, may be added after the polymerization process is ended (col. 14, lines 25-47).

However, if no salt is used, the product of polymerization is not an aqueous polymer dispersion under the condition disclosed by Fong et al. Fong et al. nowhere discloses that one may obtain such an aqueous polymer dispersion from the monomers they employ without the salt. The broadest statement of the preparation method specifies at least 5 weight percent salt, col. 6, line 52 to col. 7, line 25. The emphasis of the disclosure is on the employment of such salt and the claims require it. The sentence at col. 14, lines 25-27 must be construed in light thereof. Salt may be added after polymerization to obtain the aqueous polymer dispersion, but then the dispersion is not substantially free of ionizing salt.

The herewith submitted declaration under Rule 132 of Dr. Muller demonstrates that repeating a working example of a polymer preparation from monomer, Example 1 of Fong et al., but without the added salt, resulted in an aqueous polymer solution, not an aqueous dispersion (as the term is here employed), particularly of particles of the specified size.

In order to obtain the aqueous dispersion, salt in the specified amounts was a required component of the polymerization recipe, as the declaration demonstrates.

Again, when salt is used, along with or after polymerization, the terms of the subject claim are not met and the claims are not anticipated.

Nor are the claims obvious over Fong et al.

The Official Action states:

It would have been an obvious expedient, to one of ordinary skill in the art, to omit the inorganic salt along with its function (stability and flowability enhancement of the resulting aqueous polymer dispersion) as provided for under the guise of *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975).

The relevant part of the *Kuhle* decision is as follows:

We further agree with the board that deletion of the switch member (and other elements) found in *Smith and Sherrard*, thereby deleting their function, was an obvious expedient. *In re Keegan*, 51 CCPA 1344, 331 F.2d 315, 141 USPQ 512 (1964). Appellant contends that the electrical circuit of his device is not completed until the electrodes are inserted into

the soil, so that a switch is not needed. However, the circuits in both Smith and Sherrard are also incomplete until the electrodes are inserted into the material to be tested.

Deletion of the switch member from the reference structure in the Kuhle situation lead to no change with overall reference apparatus function.

Deletion of the salt from the Fong et al. recipe lead to a viscous solution rather than to a flowable dispersion, requiring altogether different handling procedures.

Accordingly, the fact that the present Applicants teach one how to obtain a dispersion of polymer particles without the use of salt is in fact unobvious. Applicants teach one how to delete the salt thought necessary by the prior art, but in effect, retain its function, thus avoiding the undesirable attributes of a high salt load (page 4, lines 18 and 19). It would appear such a contribution is indeed unobvious.

The further statement in the Official Action that "it would have been within the purview of the art -- to engender polymer particles within the scope of the claims," overlooks the requirement that the formulation be substantially free of stabilizing salts. In such case, Fong et al. obtain solutions, which contain no polymer particles at all, as the Muller declaration demonstrates.

Reconsideration and withdrawal of the rejection of Claims 8-10 under 35 U.S.C. § 103(a) as being unpatentable over Fong et al. (U.S. 6,426,383) in combination with Matsushima et al. (U.S. 5,936,042) are also requested.

The response to the above is essentially that expressed in the previous response, repeated as follows:

The subordinate Matsushima et al. document does not supply the essential feature of Applicants' disclosure, namely, achieving a product which is free of a loading of salt, yet is nonetheless a dispersion of a water soluble polymer as here specified, one indeed that has particles of a specific size range.

In Matsushima et al., the polymer is water-insoluble (but polymerization is indeed still preferably conducted in the presence of an inorganic salt, col. 4, lines 61-63). A water soluble polymer containing an amine or amidine unit is then obtained by using a nitrate ion, preferably at 3% to 40% by weight concentration (col. 5, lines 11-15 and 58 to 60).

Water soluble polymers are indeed disclosed by Matsushima as useful for the purpose recited in the Official Action. But nowhere does Matsushima et al. disclose how to obtain a dispersion of a water soluble polymer of n-vinylcarboxylic acid amide monomer without chemical modification.

The Matsushima et al. document summarizes its contribution as follows (col. 7, lines 18 to 28).

In accordance with the process of the present invention, the water-insoluble polymer having the unit of an N-vinylcarboxylic acid amide is modified with an acid to form a water-soluble cationic polymer. Then, dissolution of the obtained water-soluble cationic polymer into the aqueous medium is suppressed by the nitrate ion in the aqueous medium, and the water-soluble cationic polymer formed by the modification with an acid is held in the form of dispersed particles. Therefore, an aqueous dispersion of the water-soluble cationic polymer can be obtained in a high concentration while the viscosity is held low.

Clearly, Matsushima et al. support the unobviousness of Applicants' invention.

Applicants do not need to chemically modify their polymer product with a nitrate ion.

One may add that selectively combining a portion of the Matsushima et al. disclosure with Fong et al. is inappropriate. Fong et al. do not disclose obtaining a water soluble polymer dispersion in particulate form without salt. Fong et al. employs certain water soluble polymers to aid their dispersion as does Matsushima et al. But the dispersed polymers are different and they raise different solubility problems. The combination does not lead one to Applicants' claimed invention.

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Favorable reconsideration is therefore solicited.

Respectfully submitted,

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